

WHAT IS CLAIMED IS:

1. A clamping jaw assembly for gripping stock wire used in manufacturing nails is comprised of:

5                   a body;  
                  a wedge; and  
                  a hard material clamping insert,  
wherein the body has a cavity from receiving said wedge  
and said clamping insert.

10                 2. The clamping jaw assembly, according to  
claim 1 wherein the clamping insert includes at least  
one groove for receiving said wire.

15                 3. The clamping jaw assembly, according to  
claim 2 wherein said groove is generally semi-  
cylindrical and has a longitudinal axis.

15                 4. The clamping jaw assembly, according to  
claim 3 wherein said cylindrical groove surface is a  
smooth wave.

20                 5. The clamping jaw assembly, according to  
claim 4 wherein said cavity includes a sloped backwall.

20                 6. The clamping jaw assembly, according to  
claim 5 wherein said wedge has a sloped wedge surface  
which upon assembly of the wedge to said body,  
cooperates with said cavity sloped backwall causing the  
wedge to push said clamping insert in a forward  
25                 direction.

7. The clamping jaw assembly, according to  
claim 1 wherein said cavity includes a front side stop  
surface.

30                 8. The clamping jaw assembly, according to  
claim 7 wherein said front side stop surfaces have a  
negative taper.

9. The clamping jaw assembly, according to claim 8 wherein said negative taper angle is approximately between 1-5 degrees.

10. The clamping jaw assembly, according to 5 claim 9 wherein said clamping insert includes two tapered sidewalls adjacent a contact surface.

11. The clamping jaw assembly, according to claim 10 whereby, upon assembly, cooperation between 10 said tapered sidewalls and the negative taper angle of the front side stop surfaces forces the clamping insert downward into the cavity.

12. The clamping jaw assembly, according to claim 4 wherein said clamping insert has two or more of said grooves.

15 13. The clamping jaw, according to claim 4 wherein said clamping insert is made of cemented tungsten carbide.

14. The clamping jaw, according to claim 13 wherein said clamping insert is generally octagonal.

20 15. The clamping jaw, according to claim 4 wherein said smooth wave groove is manufactured by an EDM process.

25 16. The clamping jaw, according to claim 1 wherein said cavity has an opening that has access in a direction parallel to said longitudinal axis.

17. A clamping insert for a clamping jaw used for gripping nails is comprised of:

30 a body having at least one generally planar contact surface wherein said side surface has a generally semi-cylindrical groove for receiving wire therein;

50  
said groove has a longitudinal axis,  
said groove has a smooth wave contour along  
said longitudinal axis.

18. The clamping insert, according to claim  
5 17 wherein said clamping insert is made of cemented  
tungsten carbide.

19. The clamping insert, according to claim  
17 wherein said clamping insert is generally octagonal.

20. The clamping insert, according to claim  
10 19 wherein said clamping insert includes two tapered  
sides adjacent to said contact surface, said two  
tapered sides are angled between 1-5 degrees with  
respect to the vertical axis.

21. The clamping insert, according to claim  
15 20 wherein said clamping insert body has two or more  
said contact surfaces.

22. A nail cutter, used for manufacturing  
nails, is comprised of:

20 a cutter body; and  
a hard material cutter insert,  
wherein said cutter body includes a  
pentagonal pocket having an acute locating angle for  
positioning and retaining said cutter insert in  
position.

25 23. The nail cutter, according to claim 22  
is further comprised of:

a fastening means for fixing the cutter  
insert to the cutter body.

30 24. The nail cutter, according to claim 23  
wherein said cutter insert has an acute locating angle  
for cooperating with said pocket acute locating angle.

25. The nail cutter, according to claim 24 wherein said fastening means is an offset screw.

26. The nail cutter, according to claim 25 wherein the apex of said cutter insert acute locating 5 angle is rounded and said apex of acute locating angle of said pocket is rounded.

27. The nail cutter, according to claim 26 wherein said rounded pocket apex has a radius of curvature smaller than said radius of curvature of said 10 cutter insert so as to enable said cutter insert to firmly seat against said pocket.

28. A nail is comprised of:  
a generally cylindrical shank;  
a head; and  
15 a point,  
said shank has an exterior surface and a longitudinal axis wherein said exterior surface is a smooth wave.

29. A nail, according to claim 28 wherein said sinusoidal wave is in said longitudinal direction.

20 30. A nail, according to claim 29 wherein said smooth wave is sinusoidal.

TOP SECRET//COMINT